

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for selecting routing information to be provided to forwarding devices in a communication network, comprising:

obtaining ~~routing~~ information describing a plurality of alternative routes between forwarding devices of said communication network from a single routing table, wherein said plurality of alternative routes is deadlock free, ~~and wherein said routing information includes a plurality of alternative routes;~~

selecting ~~one of a final enabled routing from~~ said plurality of alternative routes, wherein said selecting optimizes a performance metric; and

delivering ~~said selected one of said plurality of alternative routes a forwarding table to at least one each~~ forwarding device in said communication network, the forwarding tables containing no alternative routes and causing the forwarding devices to implement the final enabled routing.

2. (Original) The method of claim 1, wherein said performance metric is network capacity.

3. (Currently Amended) The method of claim 2, wherein said step of selecting ~~one of said plurality of alternative routes~~ the final enabled routing further comprises:

determining a first set of data flows between end nodes attached to said communication network, wherein said first set of data flows is determined, at least in part, responsive to a first one of said alternative routes;

determining, responsive to said first set of data flows, a first standard deviation, wherein said first standard deviation describes a distribution of said first set of data flows across links in said communication network;

9 determining a second set of data flows between end nodes attached to
10 said communication network, wherein said second set of data flows is
11 determined response to a second one of said alternative routes;

12 determining, responsive to said second set of data flows, a second
13 standard deviation, wherein said second standard deviation describes a
14 distribution of said second set of data flows across links in said communication
15 network;

16 comparing said first standard deviation and said second standard
17 deviation;

18 selecting said first one of said alternative routes in the event that said first
19 standard deviation is lower than said second standard deviation; and

20 selecting said second one of said alternative routes in the event that said
21 second standard deviation is lower than said first standard deviation.

1 4. (Original) The method of claim 1, wherein said performance metric is fault
2 tolerance.

1 5. (Currently Amended) The method of claim 4, wherein said step of selecting ~~one~~
2 ~~of said plurality of alternative routes~~ a final enabled routing comprises:

3 determining a first difference measure, said first difference measure
4 reflecting a number of differing links between a first pair of said alternative routes;

5 determining a second difference measure, said second difference
6 measure reflecting a number of differing links between a second pair of said
7 alternative routes;

8 comparing said first difference measure and said second difference
9 measure;

10 determining a selected pair of said alternative routes, wherein said
11 selected pair of said alternative routes comprises said first pair of said alternative
12 routes in the event said first difference measure is greater than said second
13 difference measure, and wherein said selected pair of alternative routes

comprises said second pair of alternative routes in the event said second difference measure is greater than said first difference measure; and
designating a first one of said selected pair of said alternative routes as an enabled route, and designating a second one of said selected pair of said alternative routes as a backup route.

6. (Original) The method of claim 5, further comprising:

detecting a failure of said enabled route; and
replacing said enabled route with said backup route.

7. (Currently Amended) A system for selecting routing information to be provided to forwarding devices in a communication network, comprising routing logic operable to:

obtain ~~routing~~ information describing a plurality of alternative routes between forwarding devices of said communication network from a single routing table, wherein said plurality of alternative routes is deadlock free, ~~and wherein said routing information includes a plurality of alternative routes;~~

~~select one of a final enabled routing from~~ said plurality of alternative routes, wherein said selecting optimizes a performance metric; and

~~deliver said selected one of said plurality of alternative routes~~ a forwarding table to at least one each forwarding device in said communication network, the forwarding tables containing no alternative routes and causing the forwarding devices to implement the final enabled routing.

8. (Original) The system of claim 7, wherein said performance metric is network capacity.

9. (Original) The system of claim 8, wherein said routing logic is further operable to:

determine a first set of data flows between end nodes attached to said communication network, wherein said first set of data flows is determined, at least in part, responsive to a first one of said alternative routes;

determine, responsive to said first set of data flows, a first standard deviation, wherein said first standard deviation describes a distribution of said first set of data flows across links in said communication network;

determine a second set of data flows between end nodes attached to said communication network, wherein said second set of data flows is determined response to a second one of said alternative routes;

determine, responsive to said second set of data flows, a second standard deviation, wherein said second standard deviation describes a distribution of said second set of data flows across links in said communication network;

compare said first standard deviation and said second standard deviation;

select said first one of said alternative routes in the event that said first standard deviation is lower than said second standard deviation; and

select said second one of said alternative routes in the event that said second standard deviation is lower than said first standard deviation.

10. (Original) The system of claim 8, wherein said performance metric is fault tolerance.

11. (Original) The system of claim 10, wherein said routing logic is further operable to:

determine a first difference measure, said first difference measure reflecting a number of differing links between a first pair of said alternative routes;

determine a second difference measure, said second difference measure reflecting a number of differing links between a second pair of said alternative routes;

compare said first difference measure and said second difference measure;

determine a selected pair of said alternative routes, wherein said selected pair of said alternative routes comprises said first pair of said alternative routes in the event said first difference measure is greater than said second difference measure, and wherein said selected pair of alternative routes comprises said

14 second pair of alternative routes in the event said second difference measure is
15 greater than said first difference measure; and
16 designate a first one of said selected pair of said alternative routes as an
17 enabled route, and designating a second one of said selected pair of said
18 alternative routes as a backup route.

1 12. (Original) The system of claim 1, wherein said routing logic is further operable
2 to:

3 detect a failure of said enabled route; and
4 replace said enabled route with said backup route.

1 13. (Original) The system of claim 7, wherein said routing logic comprises at least
2 one digital logic circuit.

1 14. (Original) The system of claim 7, wherein said routing logic comprises program
2 code loaded into a memory of a computer system.

1 15. (Currently Amended) A system for selecting routing information to be provided to
2 forwarding devices in a communication network, comprising:
3 means for obtaining routing information describing a plurality of alternative
4 routes between forwarding devices of said communication network from a single
5 routing table, wherein said plurality of alternative routes is deadlock free, and
6 ~~wherein said routing information includes a plurality of alternative routes;~~
7 means for selecting ~~one of~~ a final enabled routing from said plurality of
8 alternative routes, wherein said selecting optimizes a performance metric; and
9 means for delivering ~~said selected one of said plurality of alternative~~
10 routes a forwarding table to at least one each forwarding device in said
11 communication network, the forwarding tables containing no alternative routes
12 and causing the forwarding devices to implement the final enabled routing.

1 16. (Currently Amended) A computer program product including a computer
2 readable medium, said computer readable medium having a computer program
3 stored thereon, said computer program for selecting routing information for
4 distribution to at least one ~~networking~~ forwarding device, said computer program
5 comprising:

6 program code for obtaining ~~routing~~ information describing a plurality of
7 alternative routes between forwarding devices of said communication network
8 from a single routing table, wherein said plurality of alternative routes is deadlock
9 free, ~~and wherein said routing information includes a plurality of alternative~~
10 ~~routes~~;

11 program code for selecting ~~one of~~ a final enabled routing from said
12 plurality of alternative routes, wherein said selecting optimizes a performance
13 metric; and

14 program code for delivering said ~~selected one of said plurality of~~
15 ~~alternative routes~~ a forwarding table to at least one each forwarding device in
16 said communication network, the forwarding tables containing no alternative
17 routes and causing the forwarding devices to implement the final enabled routing.